

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Governor

MICHAEL F. EASLEY P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT SECRETARY

March 18, 2003

STATE PROJECT: FEDERAL PROJECT:

8.2322001 B-3681

BRSTP-1555(1) Nash/Edgecombe

Bridge No. 277 and Approaches on SR 1555 over CSX Railroad

SUBJECT:

DESCRIPTION:

COUNTY:

Geotechnical Report - Inventory

Project Description

The proposed project is located in Rocky Mount at the existing SR 1555 bridge over the CSX Railroad. The roadway portion of the project consists of constructing the approaches for the replacement structure and some major widening of the SR 1555 embankment. Based on the proposed design, the new alignment will be shifted approximately 12 feet to the south. Typically, the grade will match the existing roadway. An off-site detour will be utilized during construction. A Foundation Investigation Report for the replacement structure will be submitted at a later date.

The base line along -L- station 10+00 to 30+00 was investigated for this project.

Areas of Special Geotechnical Interest

- 1) The majority of the project contains surficial silt-clay soils which generally exhibit poor engineering properties and may have the potential to cause embankment stability and/or settlement problems during construction.
- 2) Relatively high ground water was encountered along the project which may cause ground water related construction problems.

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Physiography and Geology

The project is located in the "Fall Zone" where both Piedmont and Coastal Plain characteristics exist. Soils encountered at the site consist of embankment material, residual/saprolitic and soft weathered rock derived from granite of Pennsylvanian to Permian age. The project is primarily located on upland terrain where the natural topography is nearly flat with elevations ranging from 75± to 80± feet. The existing SR 1555 embankment ranges from an elevation of $80\pm$ to $110\pm$ feet.

Soils and Ground Water

Surficial soils encountered along the undisturbed portions of the roadway generally consist of 0.5 to 2.0 feet of loose fine to coarse sand (A-2-4) underlain by 4 to 8.5 feet of stiff to very stiff residual sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). An undisturbed sample (Shelby Tube) was taken at -L- station 22+50, 50 feet right in the residual clay and submitted for Triaxial CU and Consolidation testing. The residual cohesive soils are underlain by granitic saprolite consisting of 14 to 17 feet of loose to medium dense fine to coarse sand (A-2-4, A-1-b). Granitic soft weathered rock consisting of very dense fine to coarse sand (A-2-4) was encountered at an elevation of 55± to 58± feet. Approximately 4 to 30 feet of mixed sand (A-2-4), sandy clay (A-6) and clayey sandy silt (A-4) fill material overlies the upland soils along the existing SR 1555 roadway. No significant organic deposits were encountered along the project. Ground water generally lies 1 to 6 feet below the natural ground surface.

Respectfully submitted,

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Stuart S. Bowman, TEG-I

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Robert R. White, TEGS

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PROJECT REFERENCE NUMBER		SHEET NO.	TOTAL SHEETS
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